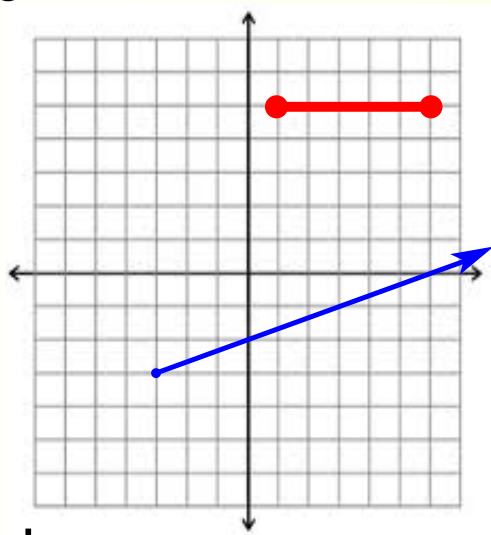


Alg. 2 Warm Up # 9-5

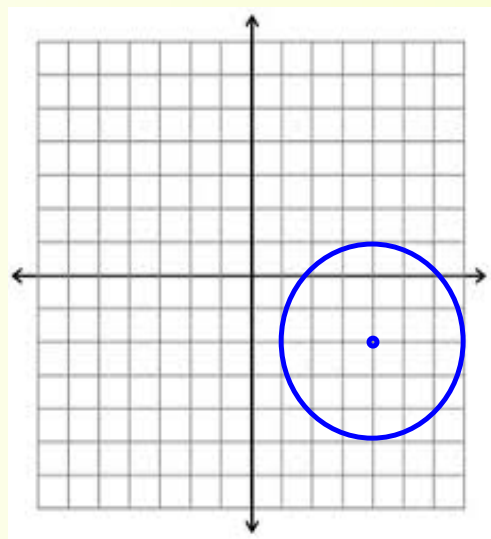
Write an equation for each graph, state the domain and range:

1.



red:

2.



blue:

HW Questions:

- CL 2-170. Chucky and Angelica were reviewing equations of parabolas for their upcoming math test. They disagreed on what the equation would look like for a parabola whose vertex was at $(-4, 3)$.
- Help them write an equation for a parabola that opens upward from its vertex at $(-4, 3)$. What is the equation of its line of symmetry?
 - Chucky wants the same parabola to open down and Angelica wants it to be compressed. Show them how to change your original equation to meet both of their desires. Does the line of symmetry change?
 - Move your parabola from part (b) 7 units to the right and 8 units down and stretch it vertically so that it is thinner than the original parabola. What is the equation of the parabola? What is the equation of its line of symmetry?

CL 2-171. For each equation, give the locator point (h, k) and the equation of any asymptotes, and then draw the graph.

a. $f(x) = -|x+2| - 1$

b. $y = \frac{1}{x} + 2$

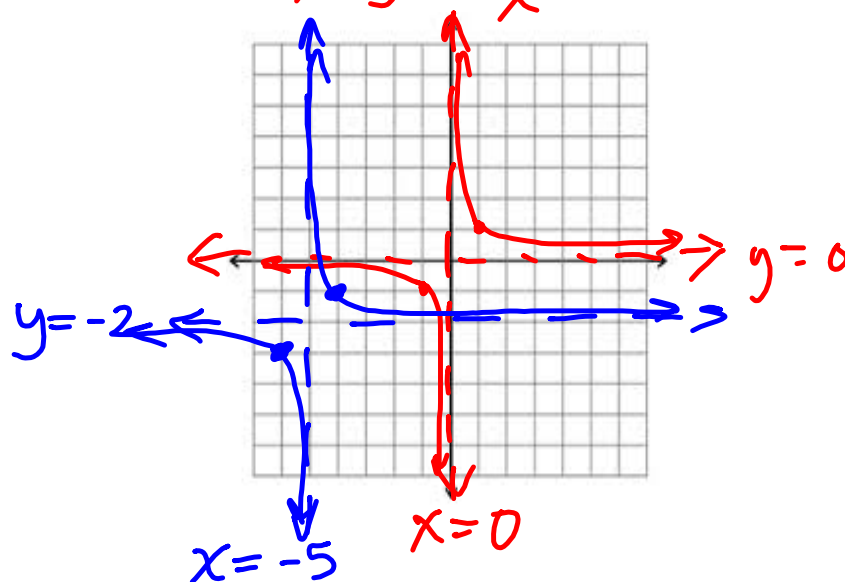
c. $y = \frac{1}{x+5} - 2$

d. $y = -x^3 + 5$

left 5 down 2

CL 2-172. For each of the functions in problem 2-171 sketch the graph of $y = f(-x)$.

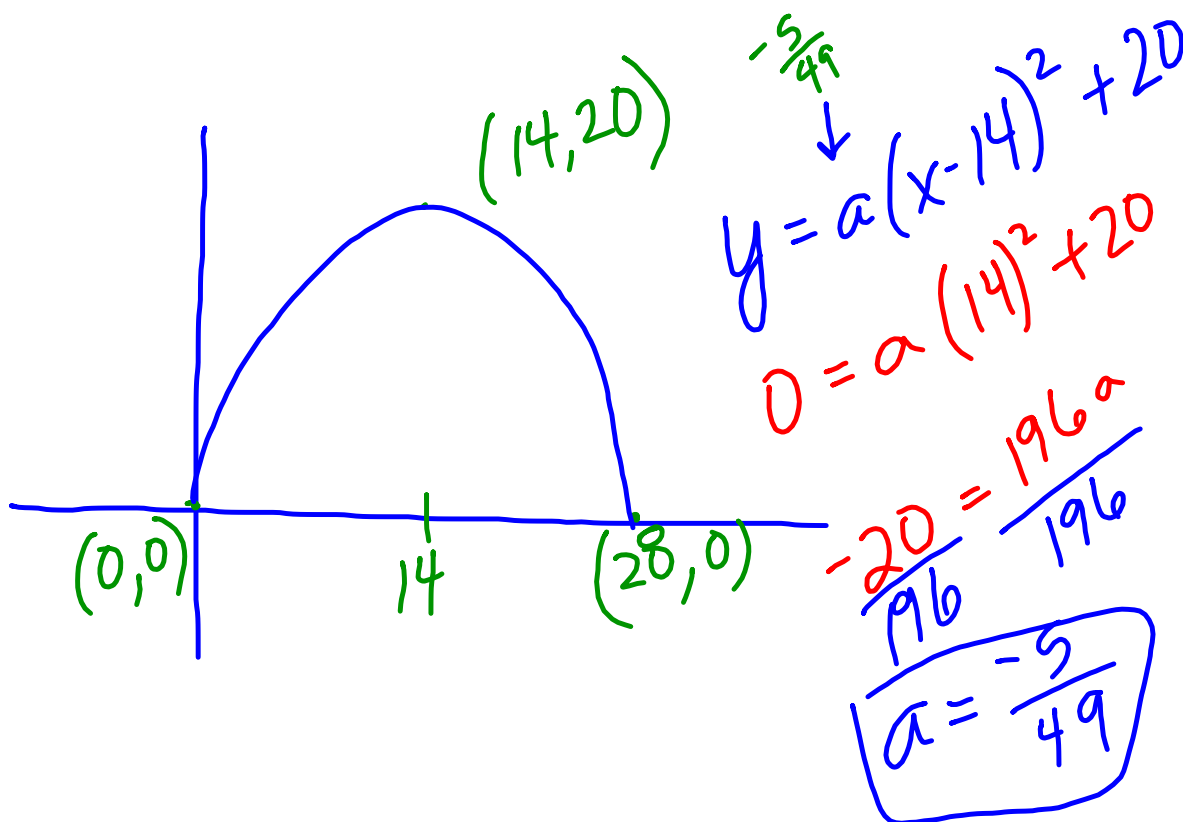
c) $y = \frac{1}{x}$ (parent)





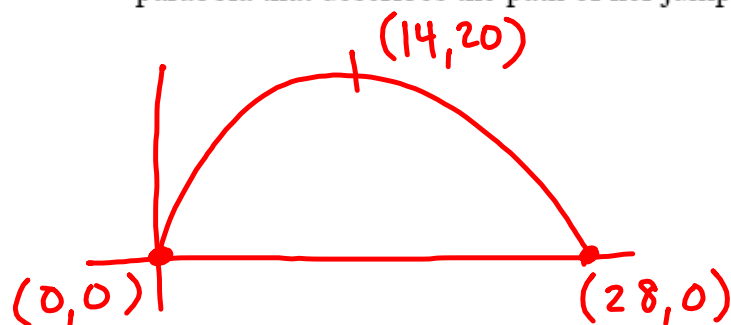
CL 2-173.

Gloria the grasshopper is working on her hops. She is trying to jump as high and as far as she can. Her best jump so far was 28 cm long, and she reached a height of 20 cm. Sketch a graph and write an equation of the parabola that describes the path of her jump.





CL 2-173. Gloria the grasshopper is working on her hops. She is trying to jump as high and as far as she can. Her best jump so far was 28 cm long, and she reached a height of 20 cm. Sketch a graph and write an equation of the parabola that describes the path of her jump.



$$y = a(x-h)^2 + k$$

$$y = a(x-14)^2 + 20$$

$$0 = a(0-14)^2 + 20$$

$$0 = a(196) + 20$$

$$\frac{-20}{196} = \frac{a(196)}{196}$$

$$a = -\frac{5}{49}$$

$$y = -\frac{5}{49}(x-14)^2 + 20$$

$$y = a(x-p)(x-t)$$

$$y = a(x-0)(x-28)$$

$$20 = a(14-0)(14-28)$$

$$20 = a(14)(-14)$$

$$\frac{20}{-196} = \frac{a(-196)}{-196}$$

$$a = -\frac{5}{49}$$

$$y = -\frac{5}{49}(x)(x-28)$$

CL 2-174. Use what you know about transforming parent graphs to write an equation for each of the graphs described below.

a. A parabola stretched by a factor of 0.25, opening downward and shifted 12 units down and 3 units left.

b. A cubic with a stretch factor of 2 and a locator point at $(-6, 1)$.

c. A hyperbola, $y = \frac{1}{x}$, but with asymptotes at $y = -6$ and $x = 2$.

$$y = \frac{1}{x-2} - 6$$

174b $\rightarrow y = a(x-h)^3 + k$

$$y = 2(x+6)^3 + 1$$

CL 2-175. Find the equation of the exponential functions with a horizontal asymptote at $y = 0$ through the following pairs of points.

a. $(2, 99)$ and $(6, 8019)$

b. $(-1, 50)$ and $(2, 25.6)$

$$y = a \cdot b^x$$

$$50 = ab^{-1}$$

$$\frac{25.6}{50} = \frac{ab^2}{ab^{-1}}$$

$$0.512 = b^3$$

$$\sqrt[3]{0.512} = \sqrt[3]{b^3}$$

$$b = 0.8$$

$$\sqrt[4]{81} = \sqrt[4]{b^4}$$

$$3 = b$$

$$\frac{99}{9} = \frac{a \cdot 3}{3}$$

$$a = 11$$

$$y = 11(3)^x$$

Groups: finish up and turn in

Week 9 Classwork

Warm up

Tan (pt-slope form)

Yellow

White

Blue

Today's Classwork: Tan WS, Ch. 2 Review
(Part of next week's packet)

Practice for Tuesday's Group Event,
quadratic situation to equation.

Review the following problems from
your homework:

2- #69, 81, and 173

Group Event Tuesday:
Situation to quadratic equation

Chapter 2 Test: Thursday

HW:

CI 2- #176 ---> 181

Group Event Tuesday:
Situation to quadratic equation

Chapter 2 Test: Thursday